ABSTRACT

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Title of diploma thesis: Study of retention behavior of polar analytes on novel types of the stationary phases.

The retention behavior of selected polar analytes (sulphanilic acid, p-hydroxybenzoic acid, p-aminobenzoic acid, 3,4-diaminobenzoic acid, 3-nitrophenol, 3-aminophenol) on two different types of stationary phases in HILIC mode was studied in this diploma thesis. The following stationary phases were used in these experiments: column packed with pure silica Atlantis HILIC Silica, which is widely used for separation in HILIC mode and zirconia column with filling ZirChrom ® - PHASE packing, which is a possible alternative to silica based columns for analysis in HILIC mode, especially due to their high thermal and chemical stability in the whole pH range.

The influence of the mobile phase strength on the retention of the selected analytes was tested on both columns. The influence of buffer strength, mobile phase pH and temperature was tested only on zirconia column (due to its higher stability). The chromatographic conditions used in this work were selected according to results of initial experiments.